

/ Descriptions

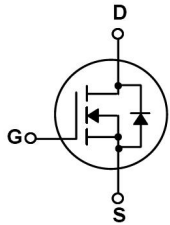
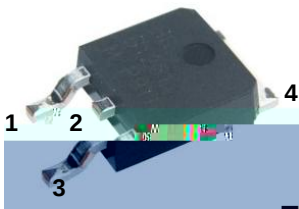
TO-252 N MOS N-CHANNEL MOSFET in a TO-252 Plastic Package.

/ Features

Fast switching, low on resistance, low gate charge, low reverse transfer capacitances.

/ Applications

Used in various power switching circuit for system miniaturization and higher efficiency .

/ Equivalent Circuit**/ Pinning**

PIN1 G PIN 2 D PIN 3 S PIN 4 D

/ h_{FE} Classifications & Marking

See Marking Instructions.

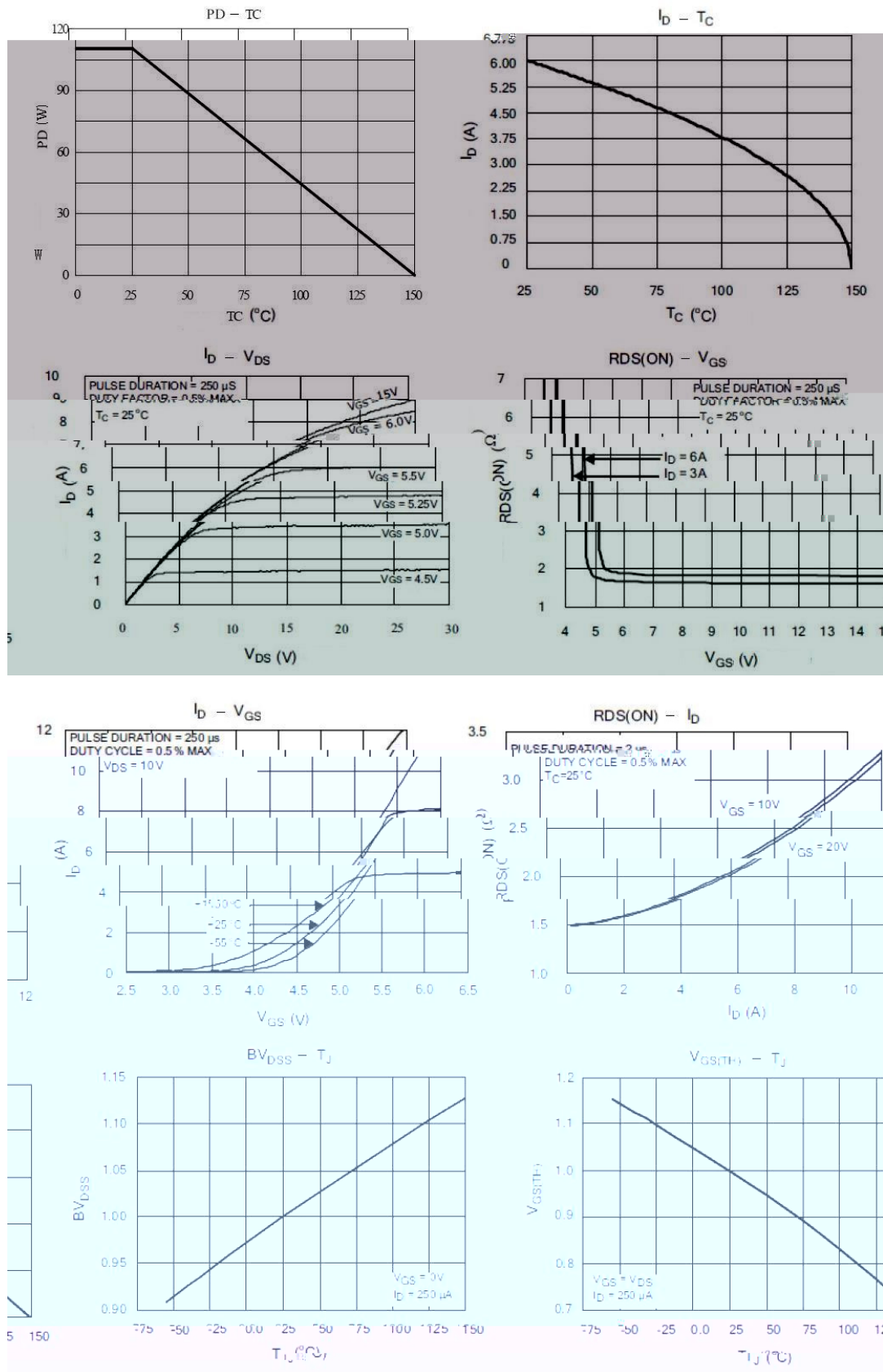
/ Absolute Maximum Ratings($T_a=25^\circ\text{C}$)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	800	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	4.0	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	3.2	A
Drain Current - Pulsed	I_{DM}	16	A
Gate-Source Voltage	V_{GS}	± 30	V
Single Pulsed Avalanche Energy	E_{AS}	300	mJ
Repetitive Avalanche Energy	E_{AR}	26	mJ
Avalanche Current	I_{AR}	2.3	A
Power Dissipation	$P_D(T_c=25^\circ\text{C})$	110	W
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to 150	
Thermal Resistance, Junction to Case	R_{JC}	1.14	/W
Thermal Resistance, Junction to Ambient	R_{JA}	62.5	/W

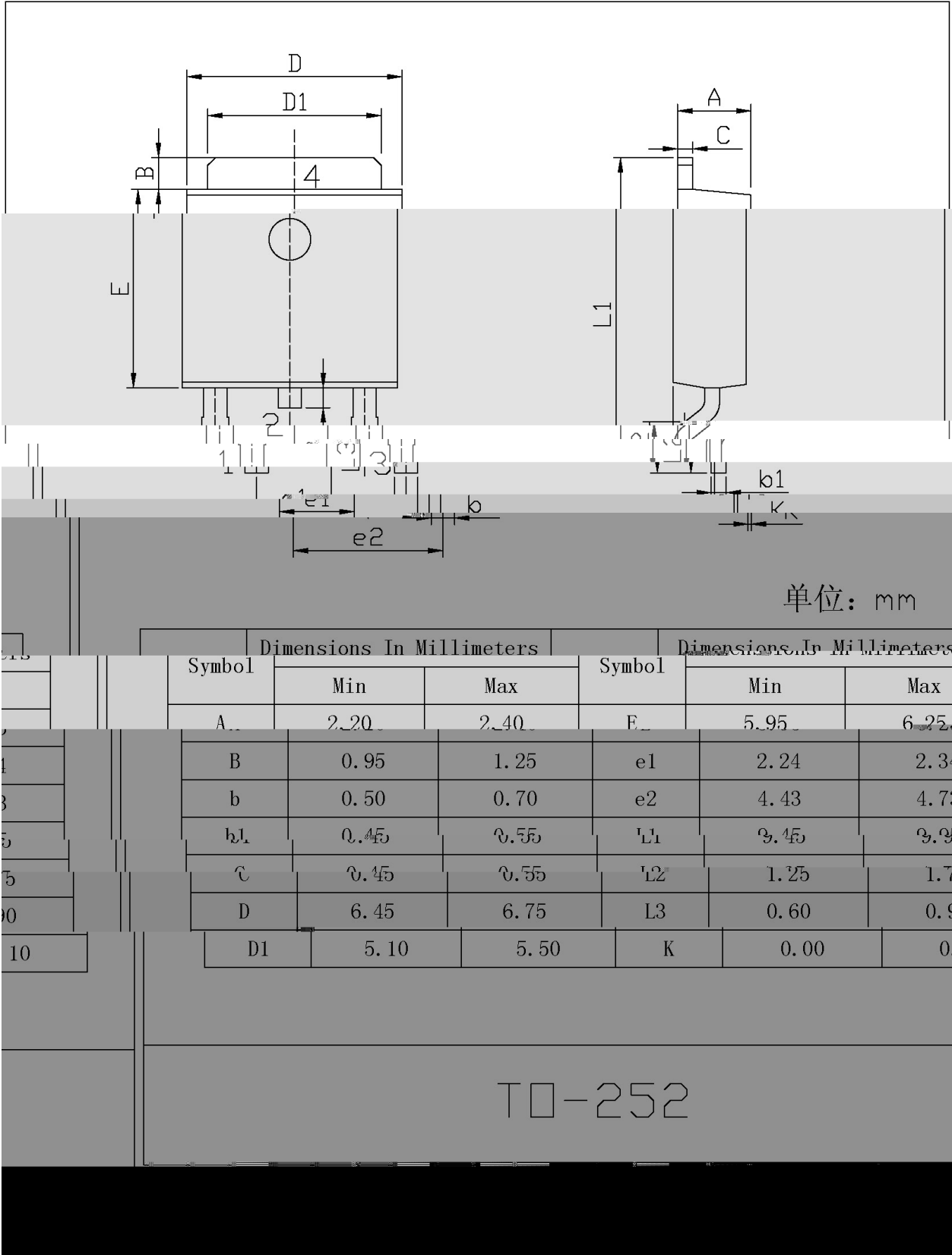
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\text{ A}$	800			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=800V$ $V_{GS}=0V$			25	A
		$V_{DS}=640V$ $T_a=125^\circ\text{C}$			250	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 30V$ $V_{DS}=0V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	2.0		4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=2.4A$		1.85	2.2	
Forward Transconductance	g_{FS}	$V_{DS}=15V$ $I_D=2.4A$		7.5		S
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=4.0A$			1.5	V
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		1350		pF
Output Capacitance	C_{oss}			100		pF
Reverse Transfer Capacitance	C_{rss}			15		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD}=400V$ $I_D=4.0A$ $R_G=12\Omega$ $V_{GS}=10V$		16		ns
Turn-On Rise Time	t_r			18		ns
Turn-Off Delay Time	$t_{d(off)}$			50		ns
Turn-Off Fall Time	t_f			25		ns

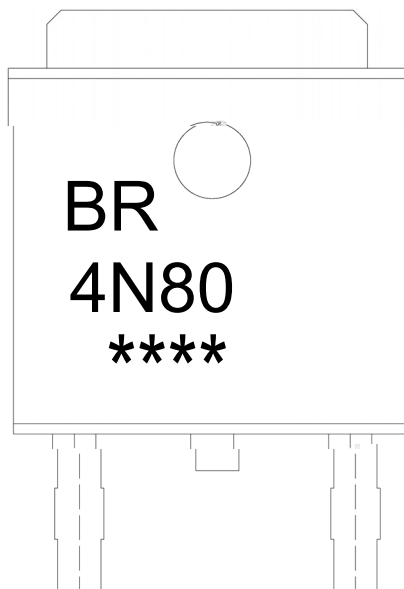
/ Electrical Characteristic Curve



I Package Dimensions



/ Marking Instructions



BR

4N80

Note:

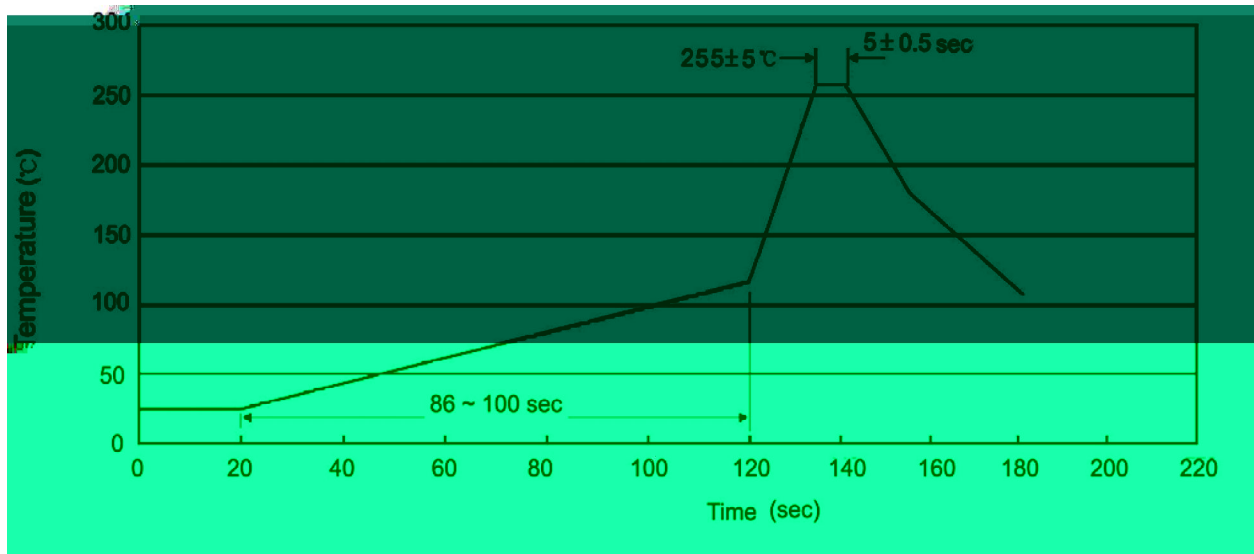
BR: Company Code

4N80: Product Type.

****: Lot No. Code, code change with Lot No.



() / Temperature Profile for Dip Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 255±5 | | 5±0.5sec; | | 2.Peak Temp.:255±5 , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

270±5 10±1 sec. Temp.:270±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	5	25,000	13 ×16	360×360×50	385×257×392

/ TUBE

Package Type	Units					Dimension (unit mm ³)		
	Units/Tube	Tubes/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	